OCT 25 2001
PATENT & TRADEMARK OFFICE

#4

Docket No. 017.40096X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Petri KOSKELAINEN

Application No. 09/938,290

Filing Dated: August 24, 2001

Title: SERVICE MOBILITY AND RECOVERY IN COMMUNICATION NETWORKS

TRANSMITTAL OF FORMAL DRAWINGS

October 25, 2001

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

Submitted herewith are 9 sheets of formal drawings (Figs. 1-9) in connection with the above-identified application.

Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP Deposit Account No. 01-2135 (Case No. 017.40096X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

Robert M. Bauer, Registration No. 34,487

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FIG. 1

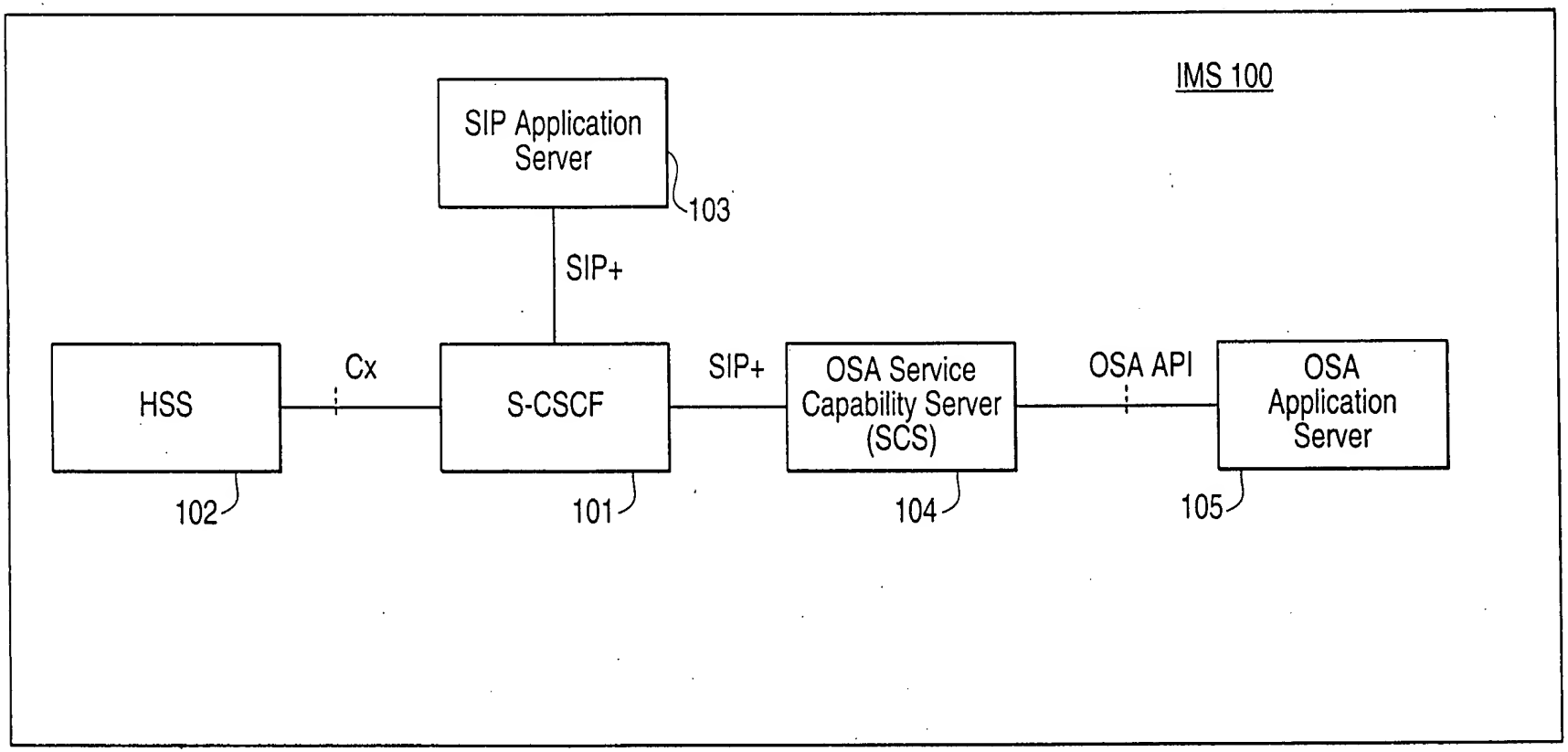

IMS 100
SIP Application Server
103
SIP+
HSS
Cx
S-CSCF
SIP+
OSA Service Capability Server (SCS)
OSA API
OSA Application Server
102
101
104
105

FIG. 2

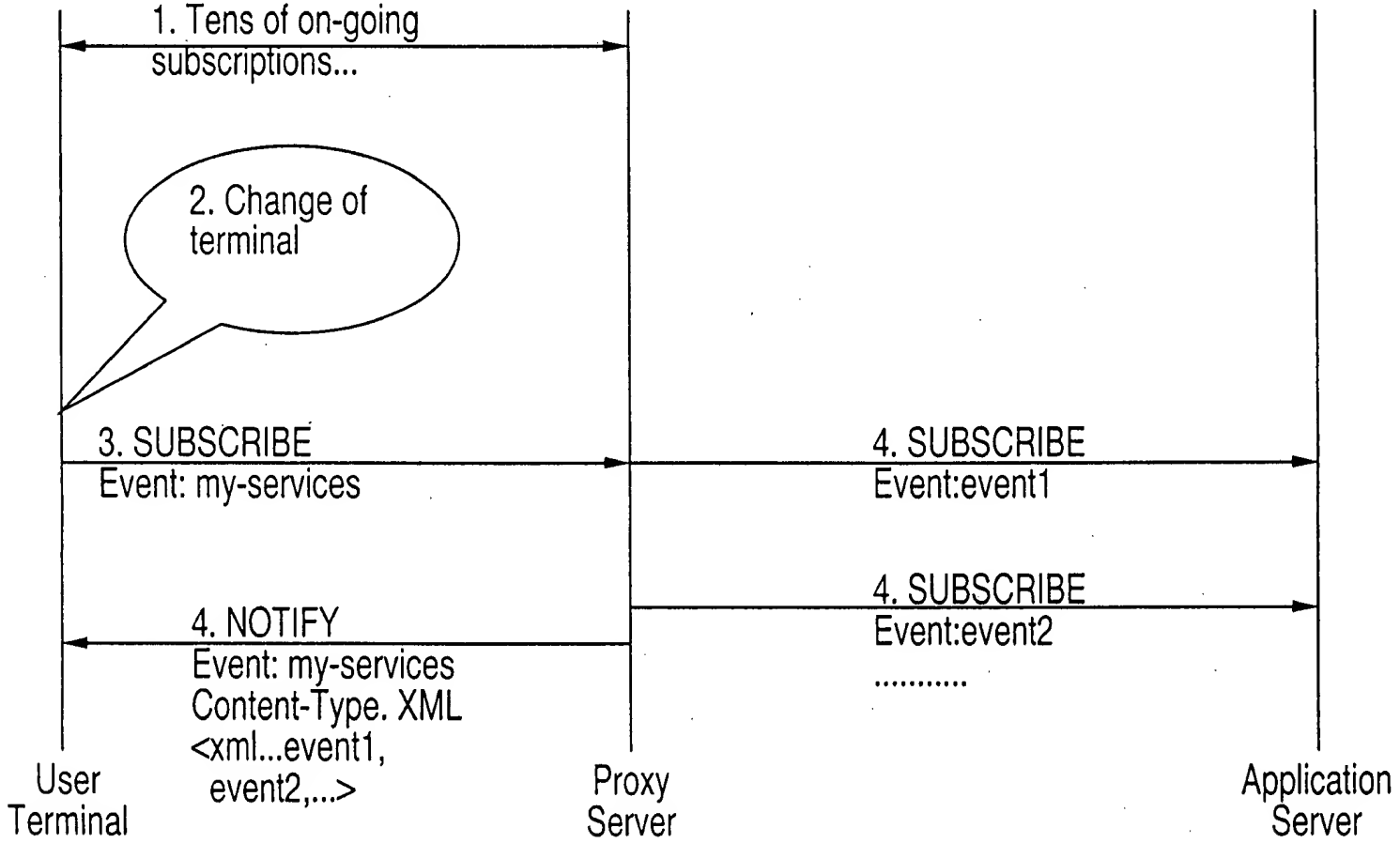

1. Tens of on-going subscriptions...
2. Change of terminal
3. SUBSCRIBE
Event: my-services
4. SUBSCRIBE
Event:event1
4. SUBSCRIBE
Event:event2
.....
4. NOTIFY
Event: my-services
Content-Type. XML
<xml...event1,
event2,...>
User Terminal
Proxy Server
Application Server

FIG. 3

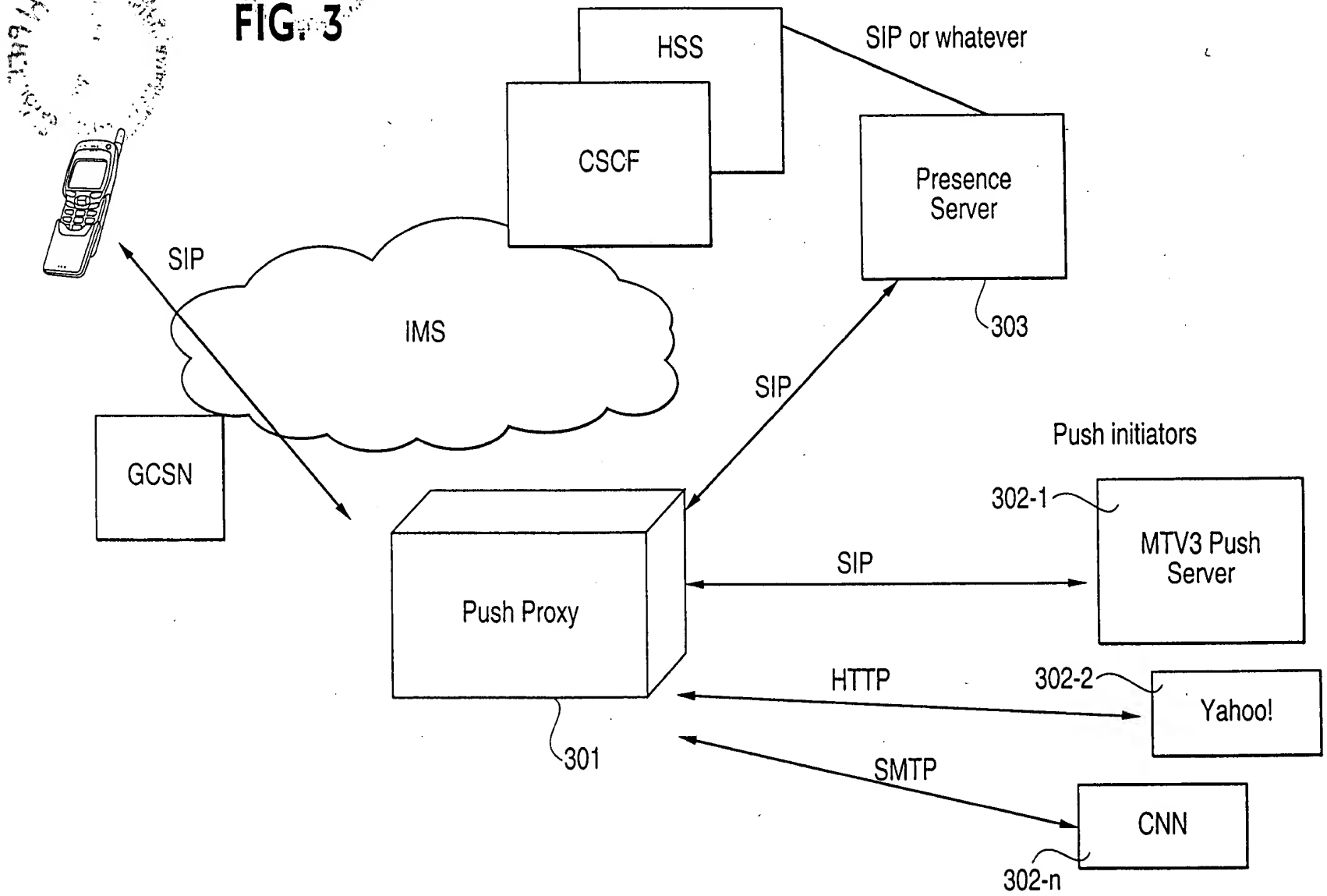

HSS
SIP or whatever
CSCF
Presence Server
SIP
IMS
303
SIP
Push initiators
GCSN
302-1
MTV3 Push Server
SIP
Push Proxy
HTTP
302-2
Yahoo!
301
SMTP
CNN
302-n

FIG. 4

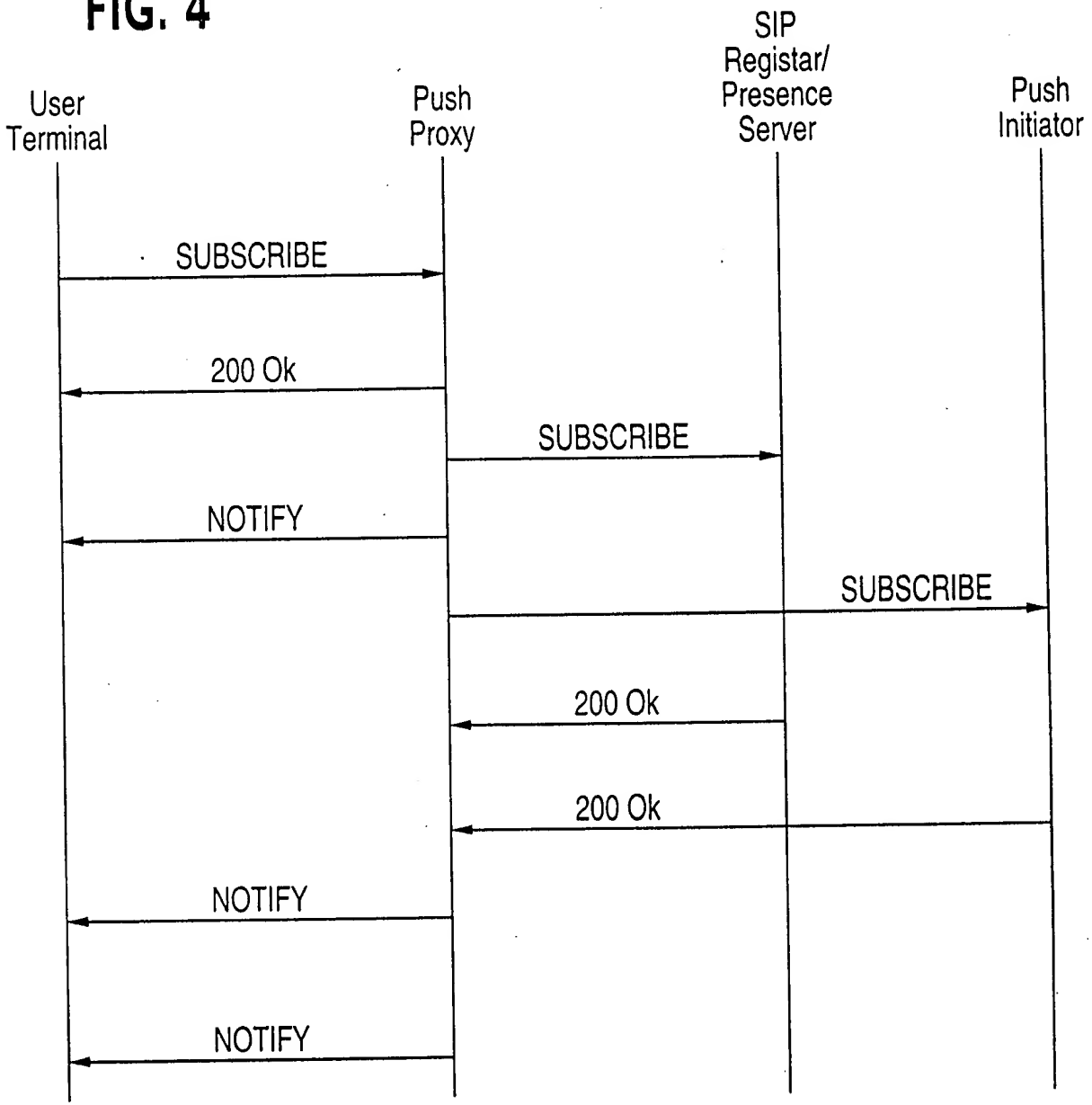

User Terminal
Push Proxy
SIP Registar/ Presence Server
Push Initiator
SUBSCRIBE
200 Ok
SUBSCRIBE
NOTIFY
SUBSCRIBE
200 Ok
200 Ok
NOTIFY
NOTIFY

FIG. 5

SIP SUBSCRIBE
Event: Push
From: sip:pk@mci.com
Content: XML
<XML allow_ads=no>

Push Proxy

202 Accepted / 200 ok

FIG. 6

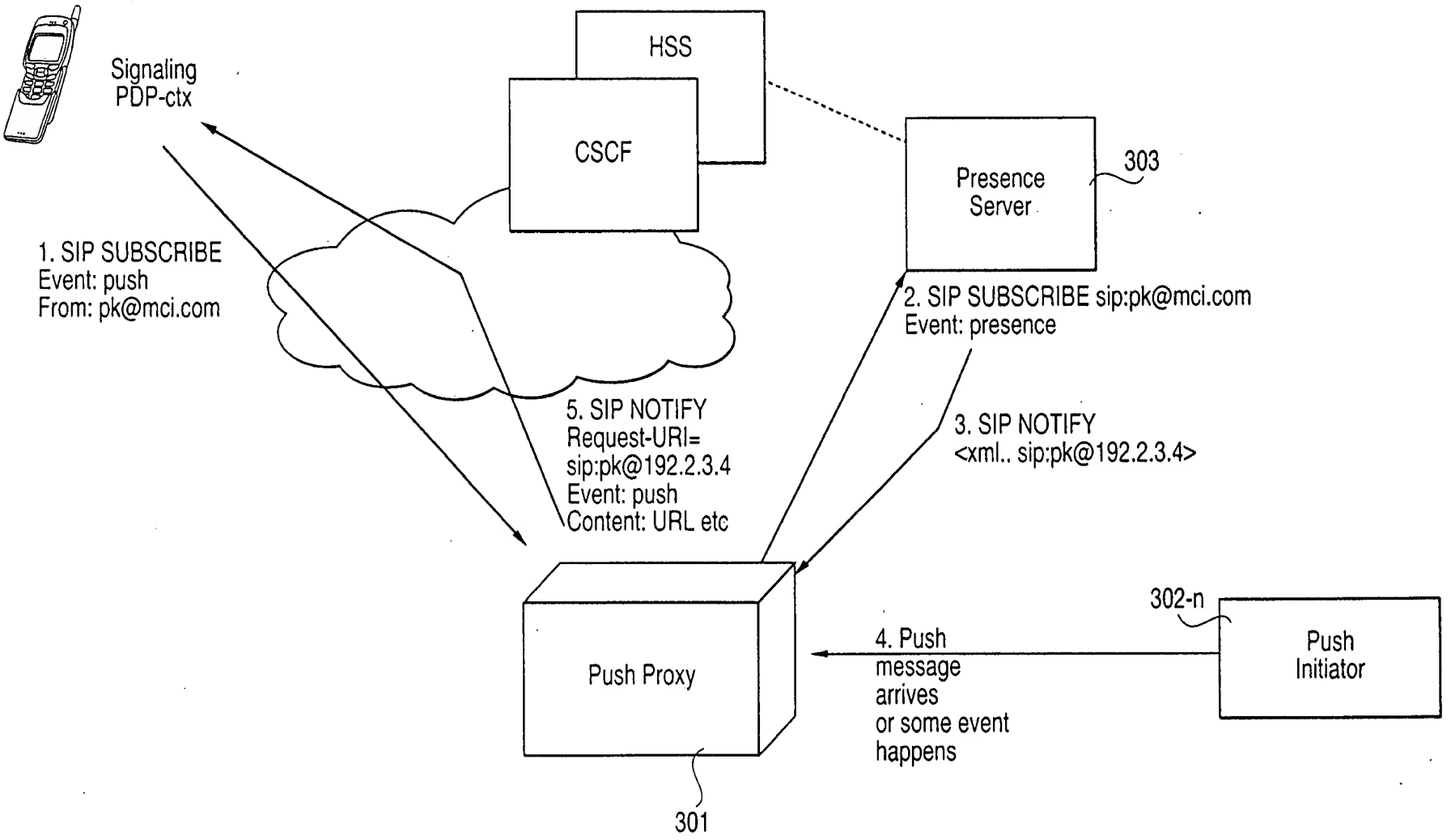

Signaling
PDP-ctx
HSS
CSCF
Presence
Server
303
1. SIP SUBSCRIBE
Event: push
From: pk@mci.com
2. SIP SUBSCRIBE sip:pk@mci.com
Event: presence
5. SIP NOTIFY
Request-URI=
sip:pk@192.2.3.4
Event: push
Content: URL etc
3. SIP NOTIFY
<xml.. sip:pk@192.2.3.4>
302-n
Push
Initiator
4. Push
message
arrives
or some event
happens
Push Proxy
301

FIG. 7

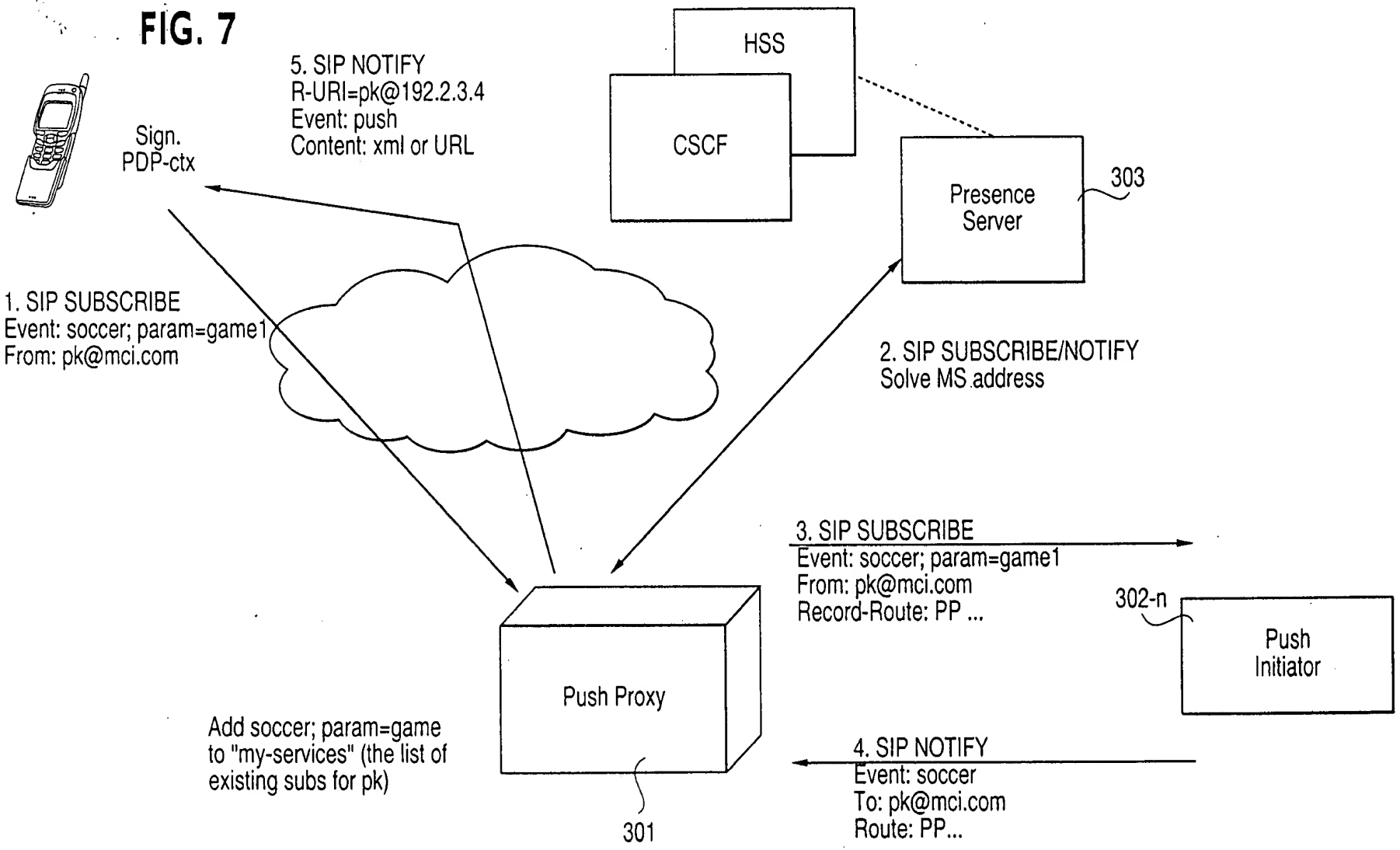

HSS
CSCF
5. SIP NOTIFY
R-URI=pk@192.2.3.4
Event: push
Content: xml or URL
Sign.
PDP-ctx
Presence
Server
303
1. SIP SUBSCRIBE
Event: soccer; param=game1
From: pk@mci.com
2. SIP SUBSCRIBE/NOTIFY
Solve MS address
3. SIP SUBSCRIBE
Event: soccer; param=game1
From: pk@mci.com
Record-Route: PP ...
302-n
Push
Initiator
Push Proxy
Add soccer; param=game
to "my-services" (the list of
existing subs for pk)
4. SIP NOTIFY
Event: soccer
To: pk@mci.com
Route: PP...
301

FIG. 8

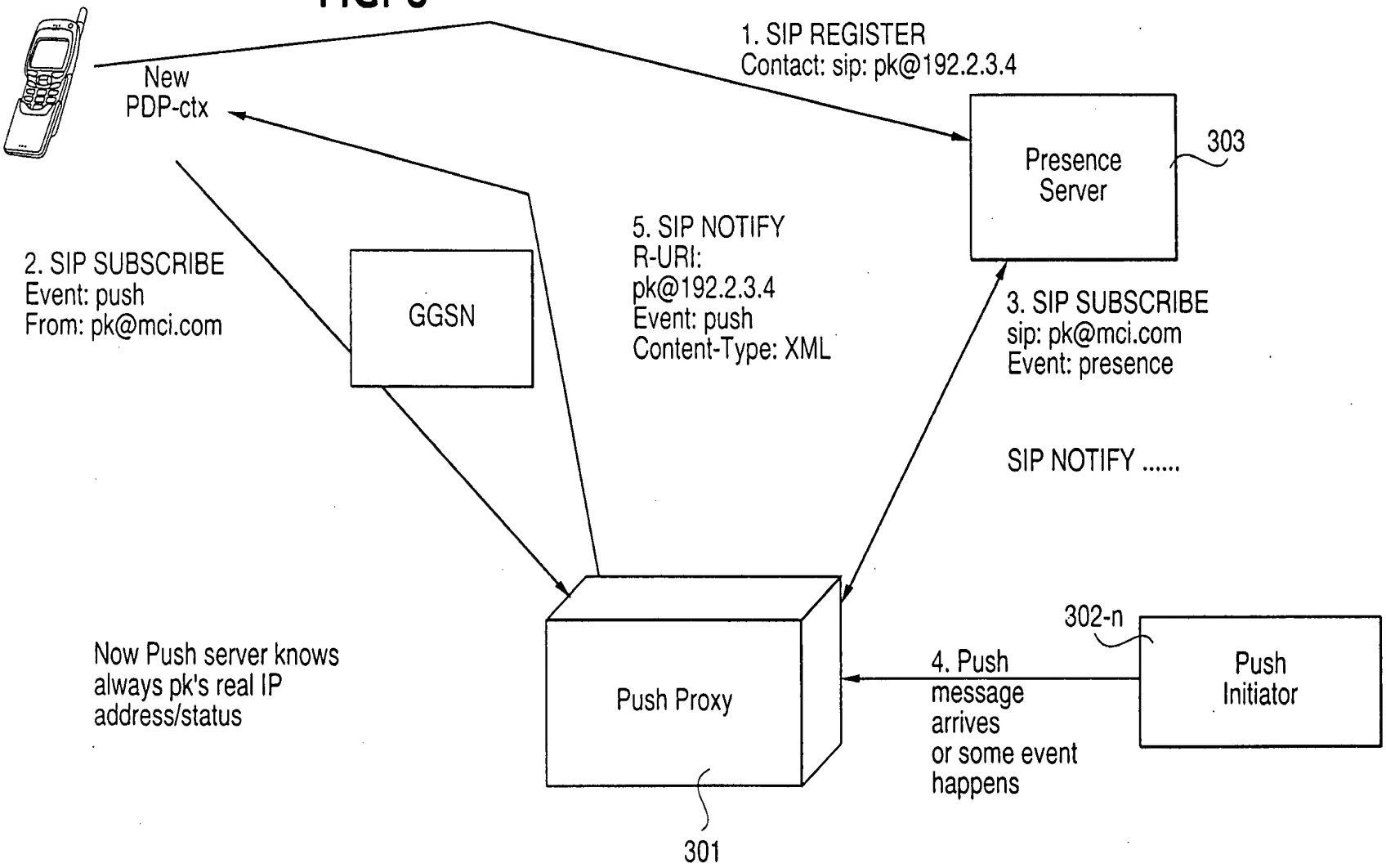
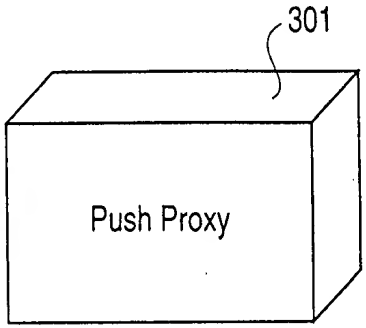

1. SIP REGISTER
Contact: sip: pk@192.2.3.4
New
PDP-ctx
Presence
Server
303
2. SIP SUBSCRIBE
Event: push
From: pk@mci.com
GGSN
5. SIP NOTIFY
R-URI:
pk@192.2.3.4
Event: push
Content-Type: XML
3. SIP SUBSCRIBE
sip: pk@mci.com
Event: presence
SIP NOTIFY .....
Now Push server knows
always pk's real IP
address/status
Push Proxy
301
302-n
Push
Initiator
4. Push
message
arrives
or some event
happens

FIG. 9

SIP or HTTP
to manage
subscriptions after
they have been
created by MT user ...



Subscription/push database:

User: sip:john@mci.com = sip:john@192.99.99.99.77
Events:
soccerupdate; param=game292 R-URI=sip:soccer.com

User: sip:petri@mci.com = sip:pk@192.22.33.44; transport = UDP

Events:

soccerupdate; param=chelseagame19
soccerupdate; param=manugame25
chess
com.nokia.clubnokia;param=foo2
push1 ALLOW_ALL

Push initiator:

R-URI=sip:soccer.com
R-URI=sip:manu.co.uk
R-URI=sip:robot@chess.fi
R-URI=sip:club.nokia.com
R-URI=localhost:50